

*Sextant Observations of the Great Comet (b) 1882. By T. P. Parry,
4th Officer, s.s. Almora.*

(Communicated by Capt. H. Toynbee, R.N.)

The observations were made in the Red Sea, off the *Dædalus* Light Ship, on October 14, 1882, at 4 A.M., app. time.

Altitude of Comet ...	...	...	5° 0'
Distance from Regulus ...	...	...	25 25
„ Sirius ...	...	...	53 20
„ Procyon ...	...	...	46 40
„ Canopus ...	...	...	61 35

Observations of Comet Wells, 1882, at Windsor, New South Wales.
By John Tebbutt.

Although this comet was detected here as early as June 15, the strong twilight prevented my seeing any stars of comparison, and it was not till the 19th that micrometer observations could be commenced. The long-continued clear weather enabled me to secure a large number of positions with the $4\frac{1}{2}$ -in. Equatorial, which I trust may prove of service in the definitive determination of the orbit. The positions from June 19 to July 6 inclusive were obtained with the filar micrometer. The early set of comparisons on July 7 were also made with the filar micrometer, but the later set with a square bar micrometer. All the positions subsequent to the 7th depend on the square bar micrometer. During the early part of July the comet would scarcely bear field illumination. The differential measures are corrected where necessary for refraction, and those dependent on the square bar have had corrections applied for the comet's proper motion, which was rather rapid in Right Ascension. I have added the log. factors for parallax, p and q being the usual corrections in time and arc respectively, and P the comet's equatorial horizontal parallax. I have selected the best authorities available for the stars of comparison. The mean places have been brought up by means of the precessions calculated for the mean dates between the epochs of the respective catalogues and 1882, by employing Peters's elements; but proper motion has not been applied in any case. On the evenings of July 1 and 2 I noted stars Nos. 19 and 20 to be respectively of the $5\frac{1}{2}$ and 6th magnitude, but was not aware that the latter was the well-known variable *R. Leonis* till I came to the reductions for the identification of the stars of comparison. It could not have been far from its maximum.

Dec. 1882.

at Windsor, New South Wales.

59

Apparent Places of Comet Wells, 1882.

Windsor Mean Time 1882.				R.A.	Log $\frac{p}{P}$	N.P.D.	Log $\frac{q}{P}$	No. of Comps.	Comp. Star.
d	h	m	s	h m s	⁺	° ' "	⁺		
June	19	5	38.7	7 22 19.31	8.7039	74 44 25	9.8036	6	1
	19	6	1.56	7 22 32.79	8.7255	74 44 15.4	9.7894	10	1
	20	6	14.4	7 35 54.20	8.7272	74 57 25.3	9.7872	4	2
	21	6	21.11	7 48 43.47	8.7253	75 10 52.0	9.7879	3	3
	21	6	21.11	7 48 43.38	8.7253			3	4
	22	6	1.2	8 0 50.80	8.6986	75 25 17.7	9.8035	10	5
	22	6	1.36	8 0 51.37	8.6992			8	6
	22	6	28.18	* +1 33.41	8.7238	* +0 34.1	9.7881	4	7
	23	6	34.10	8 12 55.92	8.7217	75 40 35.1	9.7888	6	8
	24	6	21.35	8 24 9.75	8.7030			6	9
	24	6	26.3	8 24 11.26	8.7074	75 56 5.2	9.7969	8	10
	25	6	35.43	8 35 6.31	8.7095	76 12 19.5	9.7946	5	11
	26	6	40.54	8 45 30.87	8.7078	76 28 49.7	9.7945	8	12
	27	6	14.58	8 55 15.82	8.6714	76 45 20.4	9.8093	10	13
	27	6	46.21	8 55 28.27	8.7068	76 45 42.0	9.7940	10	13
	28	6	24.10	* +0 24.99	8.6754	* +4 25.2	9.8064	5	14
	29	6	26.58	9 13 50.98	8.6721	77 19 42.8	9.8064	15	15
	30	7	20.34	9 22 47.16	8.7216	77 37 33.5	9.7819	3	16
July	1	6	17.35	* +0 37.36	8.6453	* -8 36.9	9.8116	9	17
	1	6	53.8	* +0 48.99	8.6917	* -8 9.2	9.7964	4	17
	1	6	53.8	9 30 49.78	8.6917	77 54 23.4	9.7964	4	18
	1	6	53.8	9 30 50.25	8.6917	77 54 28.5	9.7964	4	19
	2	6	55.3	9 38 40.72	8.6890	78 11 37.5	9.7963	5	20
	3	6	45.30	* -1 2.20	8.6729	* -0 27.2	9.8009	6	21
	3	6	45.30	9 46 6.46	8.6729	78 28 24.6	9.8009	6	22
	4	6	51.54	9 53 16.73	8.6765	78 45 8.9	9.7984	8	23
	5	6	52.23	10 0 5.37	8.6731	79 1 42.8	9.7981	4	23
	5	6	57.55	* +7 55.68	8.6799	* +0 48.7	9.7960	3	24
	6	7	0.10	10 6 38.60	8.6791	79 18 12.4	9.7950	1	25
	7	7	18.41	10 12 54.83	8.6968	79 34 22.3	9.7874	5	26
	7	7	46.36	10 13 3.49	8.7212	79 34 40.7	9.7754	9	26
	9	7	21.50	10 24 35.07	8.6955	80 5 33.4	9.7857	15	27
	12	7	11.11	10 40 14.03	8.6784	80 49 46.2	9.7881	8	28
	13	7	15.41	10 45 4.18	8.6824	81 4 2.3	9.7859	3	29
	13	7	15.41	10 45 4.01	8.6824	81 4 3.2	9.7859	3	30
	13	7	15.41	* -1 13.57	8.6824	* -5 50.7	9.7859	3	31

G

Windsor Mean Time 1882.				R.A.	Log $\frac{p}{P}$	N.P.D.	Log $\frac{q}{P}$	No. of Comps.	Comp. Star.
d	h	m	s	h m s	⁺	[°] ['] ["]	⁺		
July 14	7	6	10	* -1 42.42	8.6698	* -2 46.9	9.7884	3	32
17	7	21	45	11 2 36.83	8.6862	81 58 5.7	9.7806	10	33
18	7	28	47	11 6 37.08	8.6934	82 10 50.5	9.7775	9	34
19	6	56	26	11 10 23.61	8.6543	82 22 55.0	9.7863	2	35
19	7	7	39	* -1 7.75	8.6692	* +0 30.2	9.7829	5	36
19	7	12	26	* +1 16.84	8.6751	* +3 43.4	9.7817	4	37
22	7	12	16	* -1 25.68	8.6756	* -4 47.0	9.7786	5	38
22	7	13	52	11 21 15.36	8.6774	82 59 11.8	9.7782	6	39
22	7	13	52	11 21 15.35	8.6774	82 59 11.1	9.7782	6	40
23	7	28	16	11 24 40.63	8.6936	83 10 47.8	9.7731	6	41
24	7	17	12	11 27 56.02	8.6823	83 21 59.3	9.7752	7	42
25	7	17	23	11 31 6.92	8.6832	83 33 3.3	9.7740	7	43

Mean Places of the Comparison Stars for 1882.0 with the Reductions to the Apparent Places for the Dates of Observation.

Comp. Star.	Mean R.A.	Reduc- tion. +	Mean N.P.D.	Reduc- tion. +	Authority for Star's Mean Place.
	h m s	s	[°] ['] ["]	["] ['] ["]	
1	7 22 4.34	1.25	74 38 56.9	8.6	Lalande, 14515.
2	7 43 52.03	1.29	74 51 36.0	9.2	" 15246.
3	8 3 29.19	1.33	75 8 19.2	9.8	" 15939.
4	8 4 21.11	1.32	75 1 20.4	9.9	" 15968 and 15970.
5	8 1 26.21	1.32	75 18 28.3	9.8	Wash. Cat. 1860, 3294.
6	8 1 7.07	1.32	75 17 55.8	9.8	" 3292.
7	7 59 30	1.32	75 25	9.7	Star 8 mag., Approx. Pos. by Equatorial.
8	8 5 46.06	1.33	75 38 41.8	9.9	Gr. 7 Yr. Cat. 1864, 1019; Gr. 9 Yr. Cat. 1872, 801; Bruxelles Cat. 1876, 378.
9	8 27 45.53	1.38	75 54 41.6	10.5	Weisse, 8 ^b , 667.
10	8 29 37.45	1.38	75 48 58.1	10.5	Bruxelles Cat. 1873, 1351, and 1876, 405.
11	8 35 47.00	1.39	76 12 14.4	10.7	Lalande, 17130.
12	8 52 57.57	1.44	76 28 7.0	11.0	Schjellerup, 1865, 3300; Bruxelles Cat. 1873, 1423; and Rad. Obs. 1874, 520.
13	8 54 22.31	1.44	76 57 58.4	11.2	Schjellerup, 1865, 3310.
14	9 4 26	1.46	77 0	11.3	Star 8 mag., Approx. Pos. by Equatorial.
15	9 14 52.34	1.49	77 15 24.7	11.5	Weisse, 9 ^b , 270.
16	9 24 41.68	1.52	77 37 26.1	11.7	" 492.
17	9 30 0	1.53	78 2	11.8	Star 7½ mag., Approx. Pos. by Equatorial.
18	9 34 48.41	1.55	77 53 58.0	11.8	Schjellerup, 1865, 3558.

Dec. 1882.

at Windsor, New South Wales.

61

Comp. Star.	Mean R.A.			Reduc- tion. +	Mean N.P.D.			Reduc- tion. +	Authority for Star's Mean Place.
	h	m	s	s	°	'	"		
19	9	41	54.2	1.57	77	53	12.6	11.9	Radcliffe Obs. 1858, 657.
20	9	41	12.68	1.56	78	1	28.0	11.9	Wash. Cat. 1860, 4075; Gr. 7 Yr. Cat. 1864, 1201, and Wash. Obs. 1872, 216.
21	9	47	6	1.58	78	29		12.0	Star 8½ mag., Approx. Pos. by Equatorial.
22	9	52	20.12	1.60	78	28	40.5	12.0	Lalande, 19515.
23	9	52	27.28	1.59	78	58	41.9	12.1	} Lalande, 19517.
"	"	"	"	1.59	"	"	"	12.1	
24	9	52	11	1.59	79	1		12.1	Star 8½ mag., Approx. Pos. by Equatorial.
25	10	1	38.58	1.62	79	25	27.6	12.2	Wash. Cat. 1860, 4218; Gr. 7 Yr. Cat. 1864, 1229, and Gr. 9 Yr. Cat. 1872, 956.
26	10	13	12.56	1.65	79	29	15.1	12.2	Lalande, 20021.
27	10	26	35.87	1.69	80	5	13.3	12.3	Nautical Almanac, 1882.
28	10	35	12.31	1.71	80	49	12.2	12.4	Lalande, 20630 and 20631.
29	10	42	34.07	1.73	81	9	21.7	12.4	Weisse, 10 ^b , 732.
30	10	41	12.43	1.72	81	6	55.5	12.4	" 704.
31	10	46	17	1.74	81	10		12.4	Star 8 mag., Approx. Pos. by Equatorial.
32	10	51	22	1.76	81	20		12.3	Star 9 mag., Approx. Pos. by Equatorial.
33	10	58	55.76	1.77	82	1	36.2	12.3	Nautical Almanac, 1882.
34	11	0	2.16	1.77	82	13	31.4	12.3	Gr. Obs. 1859, 327; Rad. Obs. 1873, 560, and 1874, 634.
35	11	0	0.28	1.76	82	19	31.4	12.3	Lalande, 21261.
36	11	11	32	1.81	82	22		12.2	Star 9½ mag., Approx. Pos. by Equatorial.
37	11	9	7	1.80	82	19		12.2	Star 8½ mag., Approx. Pos. by Equatorial.
38	11	22	39	1.84	83	4		12.1	Star 9½ mag., Approx. Pos. by Equatorial.
39	11	28	52.73	1.86	83	4	9.6	12.0	Schjellerup, 1865, 4185.
40	11	31	13.31	1.87	83	4	38.5	12.0	Schjellerup, 1865, 4198; Rad. Obs. 1874, 675, and Brux- elles Cat. 1873, 1800; 1874, 959; and 1876, 661.
41	11	30	30.41	1.86	83	14	12.2	12.0	Wash. Cat. 1860, 4847; Schjell. 1865, 4196 and 4197; Bruxelles Cat. 1873, 1795, and 1875, 314.
42	11	32	59.37	1.87	83	17	2.7	11.9	Wash. Cat. 1860, 4872; Schjell. 1865, 4202 & 4203; Bruxelles Cat. 1874, 965; 1875, 318; and 1876, 666.
43	11	32	56.56	1.86	83	33	32.5	12.0	Lalande, 22079.

G 2

Postscript.

I may add that the comet (Comet *b*, 1882), two positions of which I forwarded to you by a previous mail, has since presented a magnificent spectacle in our morning sky. Between 9 and 10 o'clock on the morning of Sept. 17 I detected it without a telescope. It was then about four degrees west of the Sun and moving fast towards that luminary. The head and the tail for about a third of a degree were well seen. At 11^h 35^m A.M. on the following day I could again plainly distinguish it without optical aid simply by screening the eye from the Sun's direct rays. It was then less than a degree west of the Sun's western limb, and moving west, having obviously shortly before passed its perihelion. In a communication which appeared in the *Herald* of Sept. 19 I pointed out that if we assumed 6^h a.m. on the 18th as the time of perihelion passage of the great comets of 1843 and 1880, their apparent places from the 8th to the 18th would be nearly represented by those occupied by the visible comet. My conclusion was that the path of our present visitor was very similar to those described by the comets just referred to, and my suspicions have been confirmed by an approximate orbit completed at the Melbourne Observatory. Although the comet has been such a grand object in our morning sky for some time past, I have been unable till recently to find comparison stars in consequence of haze and bright twilight. As it possesses more than ordinary interest, I will endeavour to secure as many positions as possible.

Observatory, Windsor, N. S. Wales :
1882, Oct. 4.

Observation of the Transit of Venus, 1882, Dec. 6, made at Glasgow Observatory. By Professor R. Grant, M.A., F.R.S.

The ingress of *Venus* upon the Sun's disk on December 6 was well seen at the Glasgow Observatory. The sky during the early part of the day was somewhat overcast, but about one o'clock P.M. the day cleared up, and the Sun continued thereafter to shine with unclouded brilliancy until it descended beneath the horizon. My observation of the phenomenon was made with the large Equatorial of the Observatory, the object-glass of which, nine inches aperture, was reduced by a diaphragm to five and a half inches. The magnifying power used was 120. At 2ⁿ 3^m 2^s Greenwich Mean Time a very slight indentation in the Sun's limb, indicative of the external contact of the planet with the Sun, was perceptible. The planet was now seen advancing